Armed Forces College of Medicine

AFCM

Cardiopulmonary module

Clinical Integrated Cases
Pretest 6

Question 1

A 45-year-old woman is admitted to the hospital with difficulty breathing. Radiologic examination reveals a tumor invading the lung surface anterior to the hilum. Which nerve is most likely compressed by the tumor to result in dyspnea?

A. Phrenic
B. Vagus
C. Intercostal
D. Recurrent laryngeal
E. Cardiopulmonary

Question 2

Which of the following muscles elevate the ribs?

a)External intercostal muscle.
b)Internal intercostal muscle.
c)Innermost intercostal muscle.
d)Diaphragm.
e)Subcostalis.

Question 3

A 45-year-old man presented with wheezy chest and dyspnea. He used to smoke 20 cigarettes/day and used to have shisha with his friends. Examination showed emphysematous changes with decreased FEV1s. Which of the following is the histological change that resulted in this condition?

a. Failure of the type I pneumocytes to form complete blood-air barriers.
b. Destruction of the cartilage in the wall of the bronchi.
c. Destruction of the elastic fibers in the interalveolar septa.
d. Failure of type II pneumocyte to proliferate
e. Inflammation of the parietal and visceral pleura

Question 4

A 58-year-old male presents with worsening dyspnea and productive cough. He feels fatigued and complains his chest sounds wheezy. He is a retired construction worker. Chronic irritation of the respiratory epithelium results in increase in the number of which type of the following cells?

a.Ciliated cells

b.K cells

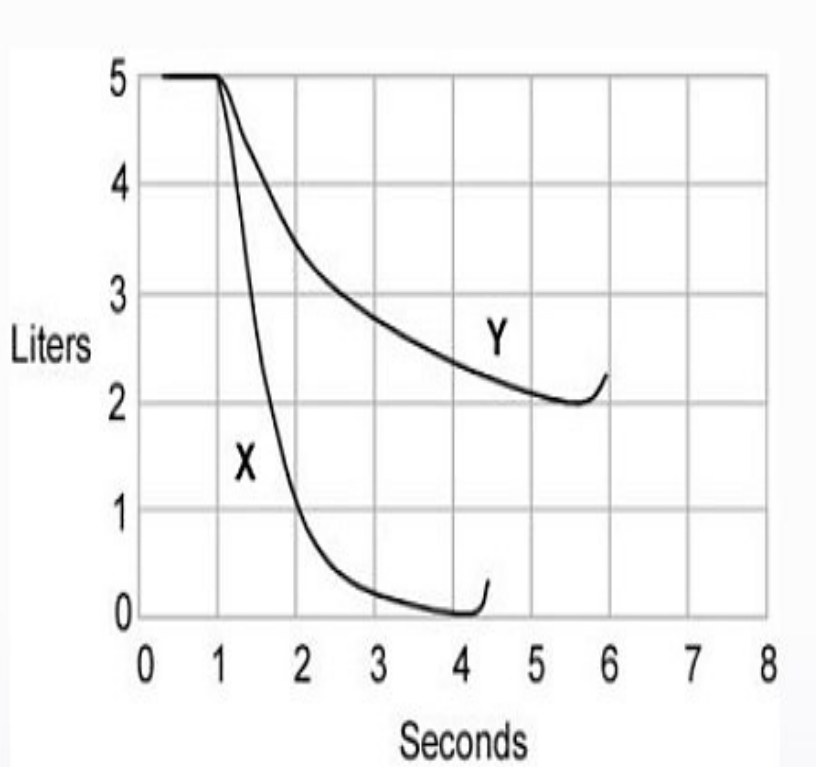
c.Goblet cells

d.Brush cells

e.Basal cells

Question 5

This spirogram shows forced expiration from 2 different individuals. Trace X was obtained from a person with healthy lung. Which of the following conditions is represent



a. Lung fibrosis.
b. Emphysema.
c. Plural effusion.
d. Pneumothorax.
e. Scoliosis.

Question 6

A 65-year-old man is brought to the emergency department because shortness of breath, he reported episodes of non-productive cough lasting 2-3 days each time and he smoked 2 packs of cigarettes daily for 30 years. Physical examination shows that he uses his accessory muscles during respiration and increased anterior-posterior diameter of the chest. Arterial blood gases show PaO_2 of 70 mmHg, $PaCO_2$ of 40 mmHg. Pulmonary function test shows that FEV1/FVC=60%, residual volume (RV) =2200ml and total lung capacity (TLC)= 6700 ml. Which of the following is the underlying cause of these findings?

a. Chest wall deformity.

b. Loss of elastic recoil.

Question 7

Which of the following organs is mainly synthesized α1 antitrypsin?

A.Kidneys
B. Liver
C. Intestines
D. Brain
E.Heart

Question 8

Which of the following is the biochemical composition of lung surfactant ?

A.Phosphatidic acid
B.Phosphatidyl ethanolamine
C.Phosphatidyl serine
D.Dipalmitoyl Phosphatidyl choline
E.Phosphatidyl inositol

Question 9

Which of the following types of emphysema is more associated with cigarette smoking?

A.Panlobular emphysema
B.Irregular emphysema
C.Paraseptal emphysema
D.Centilobular emphysema
E.Compensatory emphysema

Question 10

A 63-year-old man who smokes three packs of cigarette over forty years; complains of progressive dyspnea and wheezy chest. Clinical examination shows barrel shaped chest.
X ray shows voluminous lung with over distension of air spaces in upper lobes. What is the complication of these condition?

a.Pulmonary edema.
b.Pulmonary infarction.
c.Pulmonary hypertension.
d.Pulmonary congestion.
e.Pulmonary embolism.

Question 11

Which of the following is a recognized action of salbutamol?

(A) Diuretic effect
(B) Negative inotropic effect
(C) Skeletal muscle tremor
(D) Smooth muscle contraction
(E) Bradycardia

Question 12

An asthmatic patient came to the outpatient clinic and the doctor prescribed him a single drug as <u>monotherapy</u> to be maintained on. After a while his condition worsened, and he was admitted to the emergency unit. Which of the following could be the drug that led to the patient's deterioration?

a)Montelukast
b)Salbutamol
c)Salmeterol
d)Theophylline
e)Inhaled corticosteroids

Question 13

Chronic obstructive pulmonary disease is characterized by the following symptoms except

a)Chronic cough and expectoration
b)Wheezy chest
c)Hoarseness of voice
d)Progressive dyspnea

Question 14

Which of the following is true as regard Chronic obstructive pulmonary disease?

a)Regular use of antibiotics is mandatory.
b)High flow oxygen should be early initiated in emergency room (ER) if SPo2 is less than 90%.
c)Long acting B2 agonist is the initial therapy administrated to the patient with COPD exacerbation in the ER.
d)The value of chest x- ray during acute exacerbation is to exclude complication.

Question 15

A 68-year-old man with emphysema comes to the physician for follow-up. The patient has a long history of heavy cigarette smoking, and pulmonary function tests show a typical obstructive pattern. He has recently developed chronic hypoxemia. Which of the following patterns is most likely to occur when supplemental oxygen is given to this patient, assuming that respiration rate initially remains unchanged?

P_{AO_2} = partial pressure of oxygen in alveoli

P_{aO_2} = partial pressure of oxygen in the arterial system

	P_{AO_2}	A-a gradient	P_{aO_2}	Lung diffusing capacity
A.	↑	↓	↑	↑
B.	↑	↓	↑	↔
C.	↑	↑	↑	↔
D.	↓	↑	↑	↑
E.	↔	↔	↔	↔

Thank
you